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CENTRAL INTELLIGENCE AGENCY

REPORT

INFORMATION REPORT

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THIS IS UNEVALUATED INFORMATION

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1. Name: Moscow Tool Factory (Moskovski Instrumentalny Zavod - abbreviated MIZ).

2. Location: 49 Bolshaya Semenovskaya Ulitsa in the Stalinski area of Moscow.

3. Control: The factory comes under the Central Administration for Tool Industry of the Ministry for Machine Tool Construction of the USSR.

4. Communications: A special wide-gauge railway line connects the factory with the Moscow-Kazan Railway.

5. History: The factory was founded on its present site in 1919. The main part in the organization of the factory was undertaken by Russians who had emigrated [redacted] where they had worked in the machine tool industry, and who returned to Russia after the 1917-1918 revolution. During the first two years the factory was known as the Russo-American Tool Factory and belonged to the State Union of Moscow Factories. During its early years the factory produced simple assembling tools such as pliers, pincers, screw-drivers, and spanners of various types. Subsequently more compli-cated tools were produced. These consisted chiefly of a few types of ordinary standardized assembling tools. 50X1-HUM

6. New factory buildings and shops were established in 1929. Production of cutting and measuring tools of a more intricate nature was commenced. Prior to the war the factory was turning out a great number of taps and dies, gauges, and broaches and milling cutters.

7. In September 1941 the greater part of the personnel and equipment was evacuated and the remaining part was reorganized for the pro-duction of war material. Machine tools and other equipment were obtained from factories in Moscow which had not been evacuated. New workers, including many women, were engaged. Approximately

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30% of the total output of the factory consisted of cutting tools and measuring instruments for war factories producing ammunition, armament and transport. The factory produced all necessary templates for the manufacture of ammunition, special combined cutter blocks (Golovka) for machining shell ends and holes for threads, special three-toothed rams for employment on motorcycle cams, and mass-produced milling cutters of diameters up to 90 mm. 70% of the total output of the factory consisted of articles connected with armament, which included large scale mass-production of machine gun parts and also, to a lesser extent, production of parts for artillery weapons. These parts were produced by an assembly line method (potochny sposob) which did not require special qualifications on the part of the majority of workers concerned.

8. In 1944 the factory started a gradual switching over to peacetime production of tools which was completed early in 1946. The armorers shop (oruzheyiny), which was the largest shop, was converted into a broach shop (tsekh protyazhek). The shop which during the war produced measuring instruments for ammunition was converted into a Control and Measuring Tools and Instruments Shop (tsekh kontrolno-meritelnykh instrumentov i priborov). The switchover to peacetime production necessitated a considerable amount of new equipment and the training of workers in new specialized duties. The new equipment, which arrived gradually, was more modern than that previously used. The present factory is to all intents and purposes a new factory, as only the site of the original factory and a few of the old workers remain. Very few of the evacuated workers returned, and then only after obtaining special permission from the Ministry.

9. Production: The factory now manufactures the following:

a. Cutting tools: cutters, countersinks, reamers, milling cutters and broaches.

1) Cutting tools of numerous types, shapes, and design are produced. These include shaping tools, cutting tools with hard alloy plates (hard alloy T 15 K 6, T 5 K 10, V K 6, etc), cutting tools of Kelly, Glisson, and Harbeck types; shaping tools for machining gears and worm milling cutters, mass-produced special cutting tools for high-speed turning.

2) Countersinks and reamers of various types. The production of reamers and countersinks is comparatively small compared with other tool factories.

3) Milling cutters of numerous types. These include the cylindrical type, face milling type, disc type, cotter (shponka) type, assembled milling cutters with inserted teeth of high-speed cutting steel or with plates of hard alloys (i.e., assembled face milling cutters of from 30 to 500 mm. diameter), shaping cutters (i.e., for turbine blades of complicated sections), end mills with a cylindrical or conical tail (i.e., rough turning mills and finishing end mills for delivery to works of the Ministry of Ways and Communications and Transport Engineering for machining railway engine main rods). Cutting discs fitted with eight cutters, face mills for high-speed cutting which makes it possible to cut metal at the rate of 230 meters per minute.

4) The broach shop is the largest in the USSR. First broaches were produced by the factory in 1938. The factory now produces flat tongue broaches, slot broaches, cylindrical broaches, outside broaches, shaping broaches, radius broaches, square and hexahedral broaches, etc. The cutting teeth of some of the broaches (i.e., tongue broaches) are fitted with hard alloy plates for treatment of hard metals.

5) Assembling broaches are mass-produced on a large scale. Broaches are prepared in sizes varying from 5 - 170 mm. in diameter. Some of the broaches are very large. One, for instance, is about 140 cm. long, weighs almost 140 kgs., and has 90 sizes of teeth. The teeth increase gradually by 0.07 mm. This broach makes a groove up to 5 cm. deep in one operation. During the last three years the factory has turned out 20 to 40 new types of broaches annually.

b. Thread cutting tools: dies, chasers, thread milling cutters, thread cutting tool holders.

1) The production of dies, chasers, and thread milling cutters is small compared with other large tool factories such as the Moscow Frezer Factory. However, the production of pipe-threading and muff-threading cutter blocks is of considerable importance. From July 1948 to July 1949 the factory produced 18 types of thread cutting blocks.

2) The factory has a special pipe threading chucks shop (tsekh trubonareznykh patroncv) which produces pipe-threading, muff-threading, and muff-boring chukks for the metallurgical and oil industries for threading boring pipes, casing pipes, and pump and compressor pipes. These chucks can treat pipes and muffs of from 1.5 to 16 inches in diameter. Each chuck can treat several sizes of pipes. For instance, a muff-threading chuck can treat pipes from 4 to 13 inches in diameter. A pipe-threading chuck can treat pipes with a diameter from 9 - 13 and 5 - 9 inches. It therefore requires a small number of chucks to treat a large number of pipes of varying diameters. Many chucks are of complicated design, weigh from 1 to 2 tons, and are composed of 500 - 600 parts. In 1946 the factory commenced mass production of the first pipe-threading cutter blocks with flat dies for boring and threading pipes of from 4 to 8 inches diameter. The factory now produces 8 types of thread-cutting chucks with round dies for conical threading of pipes with diameters from 1.5 to 16 inches (types T N 4 K, T N 13 K, etc.) and for inside conical threading of muffs (types M N 4 K, M N 8 K, M N 13 K, etc).

3) The factory also produces special thread-cutting blocks of bandurko type for band threading of pipe ends for geological work, grinding cutter blocks for precision machining of inside surfaces of articles up to 1.5 meters long and with diameters up to 120 mm, and combined turning cutter blocks with cutters fixed with hard alloy plates.

4) The Chief of the Pipe-Threading Chucks Shop, Engineer P. A. Alpatov, and his assistant, Engineer A. I. Liberman, have received a Stalin prize for designing pipe-threading cutter blocks. In this they collaborated with Kartsev, an engineer of the Moscow Tool Factory Frezer, and Degtyarenko, an engineer of the Central Administration for Tool Industry of the Ministry for Machine Tool Construction of the USSR. Kartsev and Degtyarenko also received Stalin prizes.

c. Gear cutting tools: rams, worm milling cutters, gear chasers and shavers.

1) Large shop No. 2, also known as the gear-cutting shop, produces the following tools: shaping gear milling cutters for straight-toothed, oblique-toothed, and chevron wheels; worm milling cutters for cylindrical and worm geared wheels; worm milling cutters for treatment of special profile surfaces by the rolling method (po metody obkatki)

such as worm profile milling cutters for milling teeth of gears for reinhold chains, and worm milling cutters for circular saws by the rolling method. The shop has a special section, situated next to the cutting tool section, for the production of milling cutters. The number of personnel in the gear-cutting shop is 256.

2) The factory specializes in the production of rams (dolbyak). A large special section of the gear cutting tool shop has been allotted for this purpose. Rams of various types are produced and used on gear slotting machines. Rams include fine module rams (0.4 - 1.0 mm) for the production of geared wheels of small diameter for the manufacture of precision instruments.

3) Stalin prizes were awarded to the chief engineer of the factory, G. G. Ilver, chief designer G. N. Sakharov, and senior engineer M. V. Vasilchuk for working out design and technological processes for the production of gear-cutting tools including fine module rams. In 1949 M. V. Vasilchuk joined the staff of the Central Administration of the Tool Industry of the Ministry for Machine Tool Construction of the USSR.

4) Tail rams (khvostovoi dolbyak), disc rams of 100 - 360 mm. diameter for the manufacture of geared wheels with chevron gears, shavers of various types including worm shavers, multiple tool gear cutter blocks for simultaneous treatment of cylinder wheel gears, such as motor vehicle geared wheels (all gears are treated simultaneously and not consecutively, which greatly increases the speed of production); multiple tool gear cutter blocks for conical wheels with oblique gears, gear cutting chasers including MAAG type chasers.

d. Control and measuring instruments. For the production of control and measuring instruments the factory has a large shop, subdivided into five sections (gauge section, thread gauge section, flat gauge section, etc). Special instruments and apparatus include the following:

1) Mass production of evolvent meters, appliances for testing the profile of cylindrical wheel gears, controlling profiles of cylindrical wheel gears with rectangular and spiral gears of from 40 to 240 mm. diameter.

2) Mass production of appliances for testing geared wheels for play and pitch, and of appliances for testing radial play of cylindrical geared wheels with straight and spiral gears.

3) Mass production of Babchinitser angle gauges for measuring the front and rear sharpening angles of multiple blade tools (milling cutters, reamers, etc).

4) Mass production of appliances for testing the front and rear sharpening angles of broaches and round and standard cutters.

5) Appliances for testing the front angles of round dies (appliances designed by the Scientific Research Bureau of Mutual Interchangeability).

6) Appliances for testing the sharpening and circular pitch of worm milling cutters, etc.

The factory produces about 1,300 types of tools and instruments. About 85% of the factory output is by small scale mass production. Value of output in 1948 was about 65,000,000 rubles.

10. Personnel. About 2,500 persons are working in the factory. Approximately 20% of them are women. Some of the officials and professional personnel are listed below:

Director, A. M. Simonov, who has been director since the war.
Chief Engineer, G. G. Ilyar (Stalin prize laureate)
Chief Designer, G. N. Sakharov (Stalin prize laureate)
Production Chief, A. P. Vakhlamov
Secretary of Party Organization, V. A. Polyanski
President of the Factory Committee, V. G. Oganiyan
Head of the Pipe-threading Chucks Shop, Engineer P. A. Alpatov (Stalin prize laureate)
Assistant to Alpatov, Engineer A. I. Liberman (Stalin prize laureate)
Head of the Broach Shop since 1945, Engineer O. V. Spasskaya
Acting head of the Thermic Shop, Engineer G. A. Kosovich
Head of the Heating Shop (teplotsekh), Engineer I. A. Kutsev
Head of the Electrical Shop, Engineer Loitser
Head of Control and Measuring Instruments Shop, Engineer Pankov
Head of the Consumer Goods Shop (tsekh shirpotbreba) producing tools for agriculture, Engineer Shulte
Head of the Gear Cutting Shop, Engineer Yermakov
Head of the Chromium Plating Shop, Engineer Kosovich
Head of the Shop for Non-Standardized Tools, Engineer Guryavov
Head of the Laboratory, Engineer Zhirovaya (actually in charge of Precision Casting Section)
Head of the Bureau for the Preparation of Production, Engineer N. N. Makhson
Head of the Technical Section of the Factory, V. V. Zaitsev
Head of the Section for Labor and Wages, B. A. Bukhanevski
Chief of Supplies, Engineer Benamertny
Engineer technologist, K. V. Kladova
Engineer technologist, Zarechiyeva
Engineer technologist, Semenov
Engineer technologist, Valentin Ivanov
Engineer technologist, Davydov
Senior engineer, Vedeneyeva
Senior engineer, Ivanova

11. Shifts worked: Work is conducted in three shifts of eight hours each in almost all the factory shops.

12. Disposal of Products. During the latter days of August deliveries were made to the following:

Leningrad Turbine Works - broaches for turbine blades.
Novosibirsk Tool Factory - broaches for the production of standard tools.
Yegoriyevsk Machine Tool Factory Komsomolets, which produces gear-slotting machine tools.
Kolomna Heavy Engineering Works.
Moscow Low Capacity Motor Vehicle Factory.
Aviation Factory at Molotov.
Machine Tool Factory i/n Ordzhonikidze.
Locomotive Works at Bezhitsa.
Ministry for Oil Industry.
Ministry for Geology, and others.

Miscellaneous

13. The Thermic Shop is a large shop with furnaces for tool hardening. Furnaces work day and night.

14. Precise billets for tools are cast in the Precision Castings Section. This method of casting has reduced the amount of machining required by almost half.